

# KIC 005450428

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005450428-01	OBS	No	0.748658	131.919070	6.4	0.696	7.7	1.6	2.04	6631	0.61	21528.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005450428-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

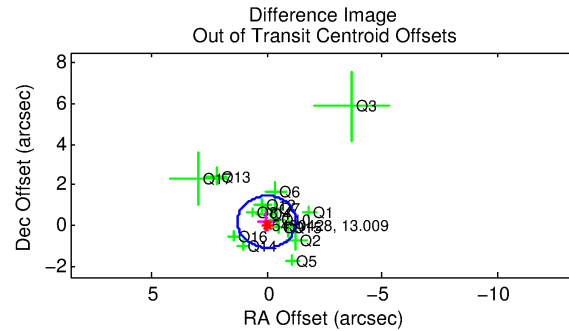
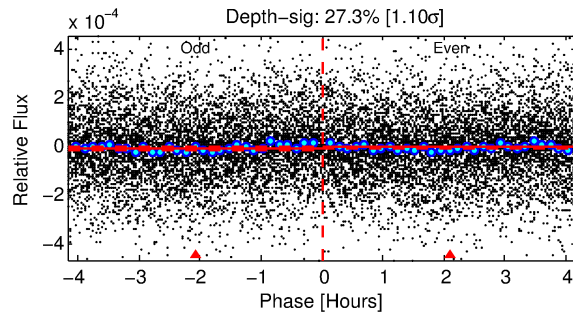
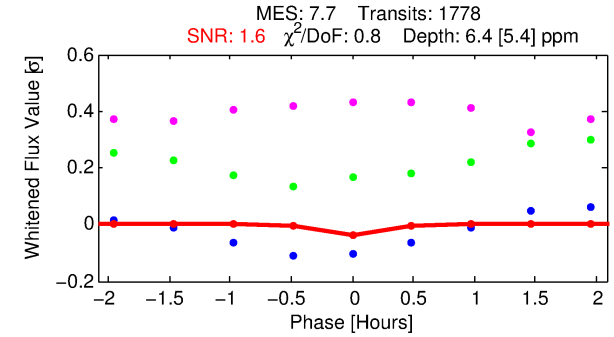
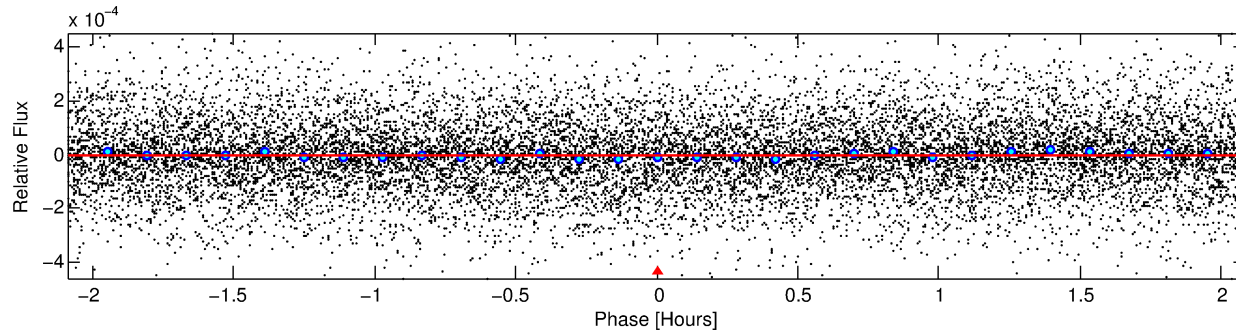
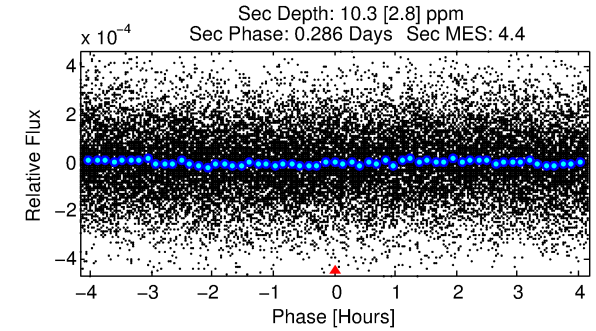
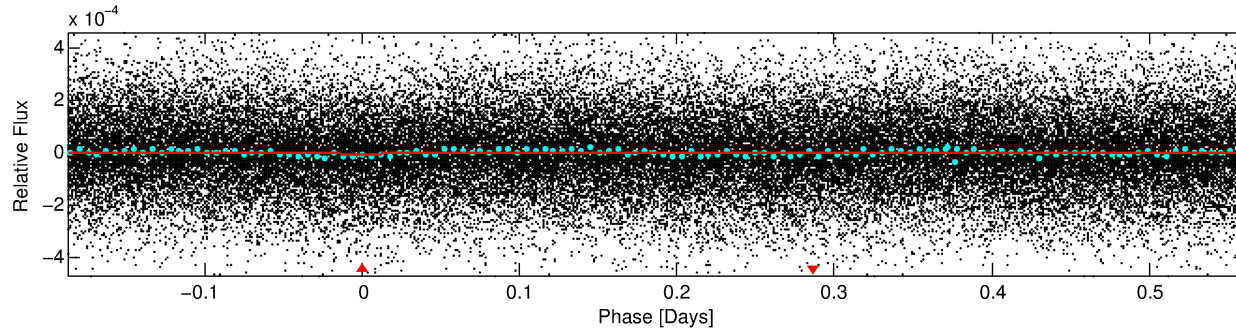
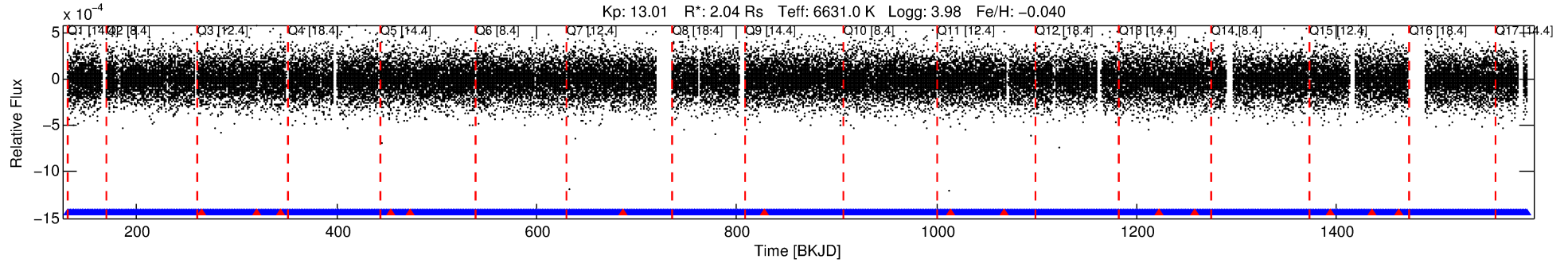
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005450428-01

No Significant Match Found

# DV One-Page Summary

KIC: 5450428 Candidate: 1 of 1 Period: 0.749 d



## DV Fit Results:

Period = 0.74866 [0.00006] d  
Epoch = 131.9191 [0.0075] BKJD  
Rp/R\* = 0.0027 [0.0019]  
a/R\* = 3.83 [11.63]  
b = 0.90 [0.73]  
Seff = 21528.38 [7433.83]  
Teq = 3089 [267] K  
Rp = 0.61 [0.45] Re  
a = 0.0183 [0.0041] AU  
Ag = 5.10 [7.41] [0.55σ]  
Teffp = 7178 [2534] K [1.60σ]

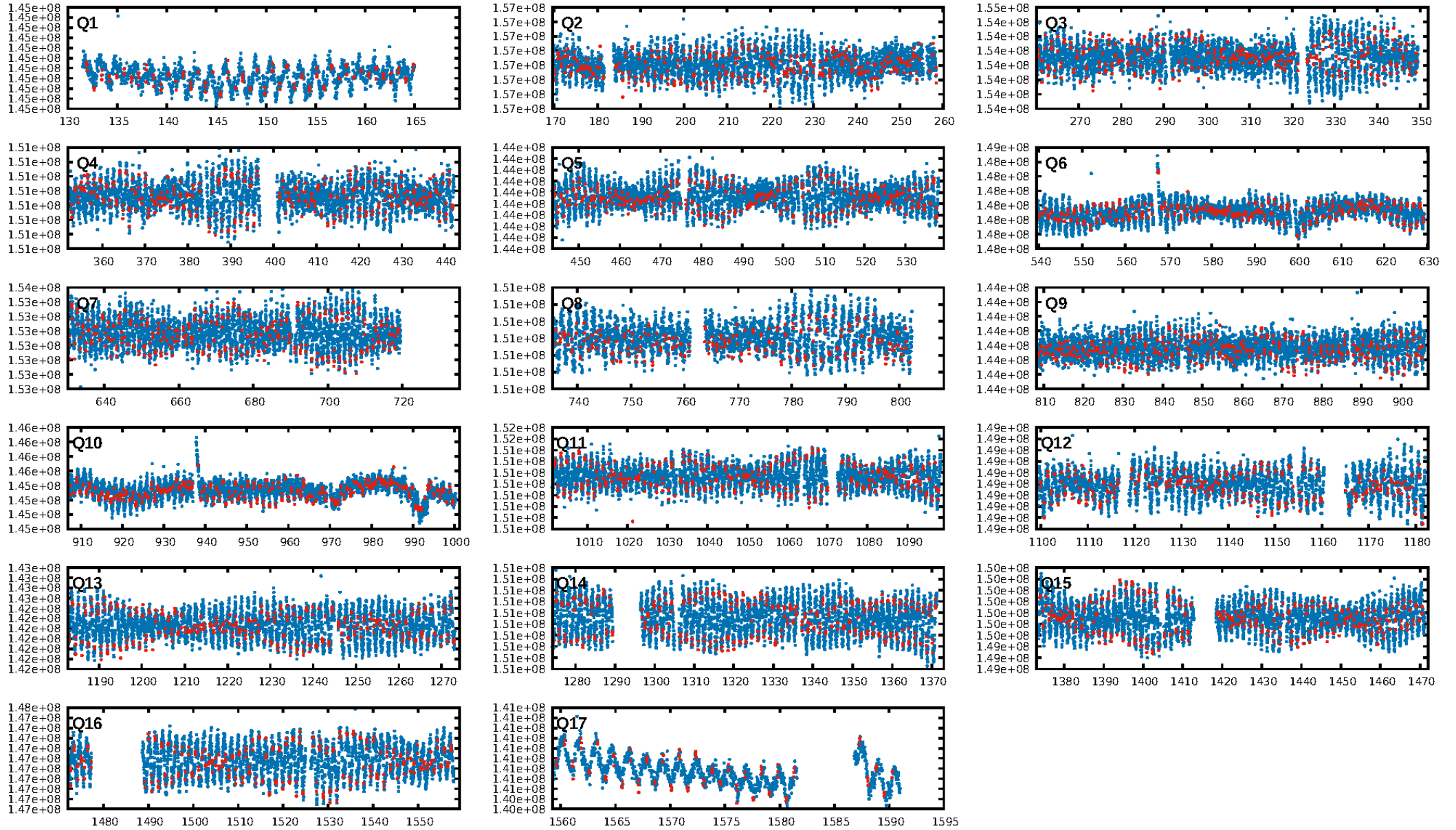
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.20e-14  
RollingBand-fgt: 0.99 [1684/1698]  
GhostDiagnostic-chr: 1.258  
Centroid-sig: 0.1%  
Centroid-so: 8.665 arcsec [2.08σ]  
OotOffset-rm: 0.200 arcsec [0.47σ]  
KicOffset-rm: 0.341 arcsec [0.73σ]  
OotOffset-st: 4/3/4/5 [16]  
KicOffset-st: 4/3/4/5 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 1.00 [17/17]

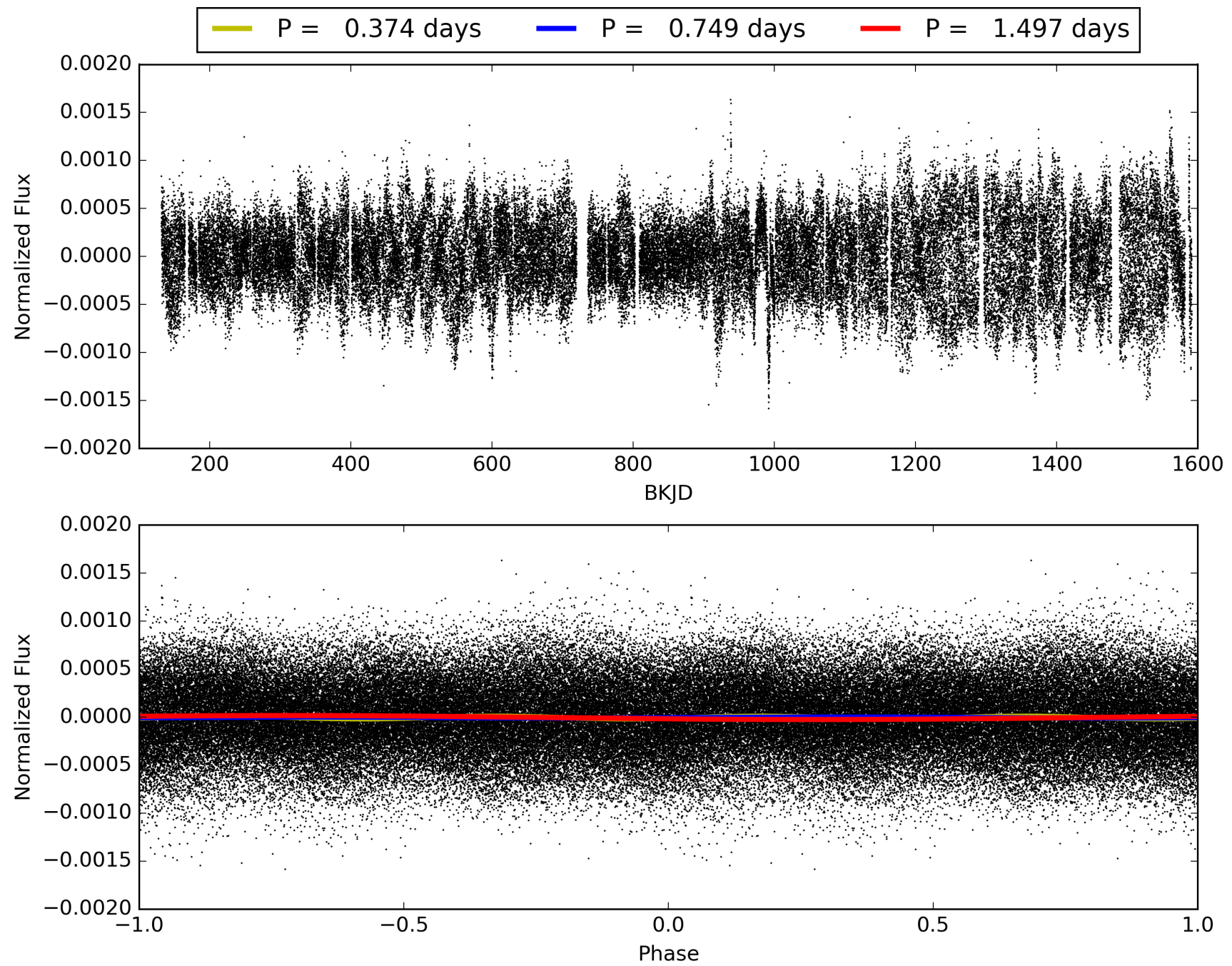
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:02:35 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005450428-01, PDC Light Curves



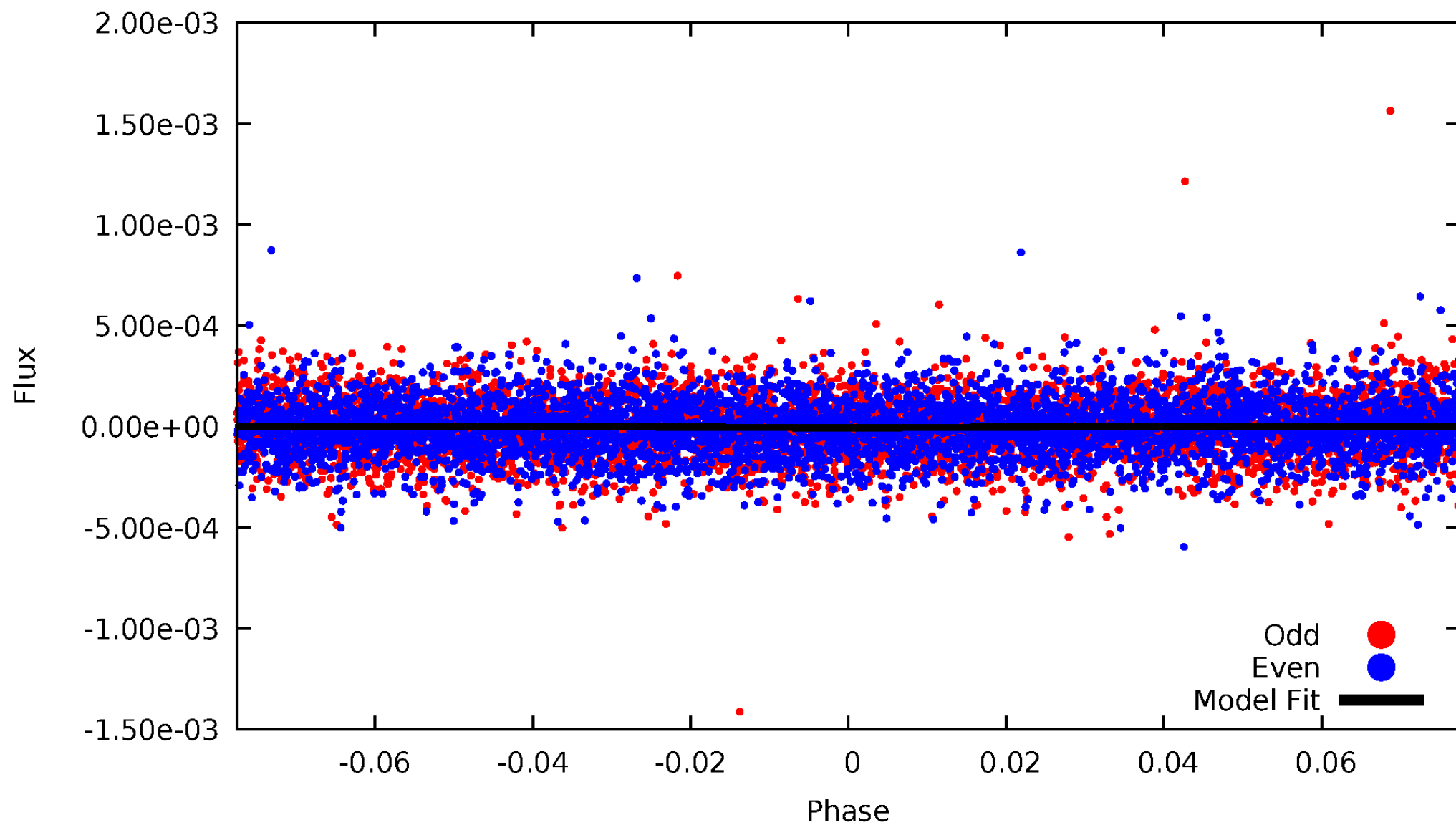
TCE 005450428-01





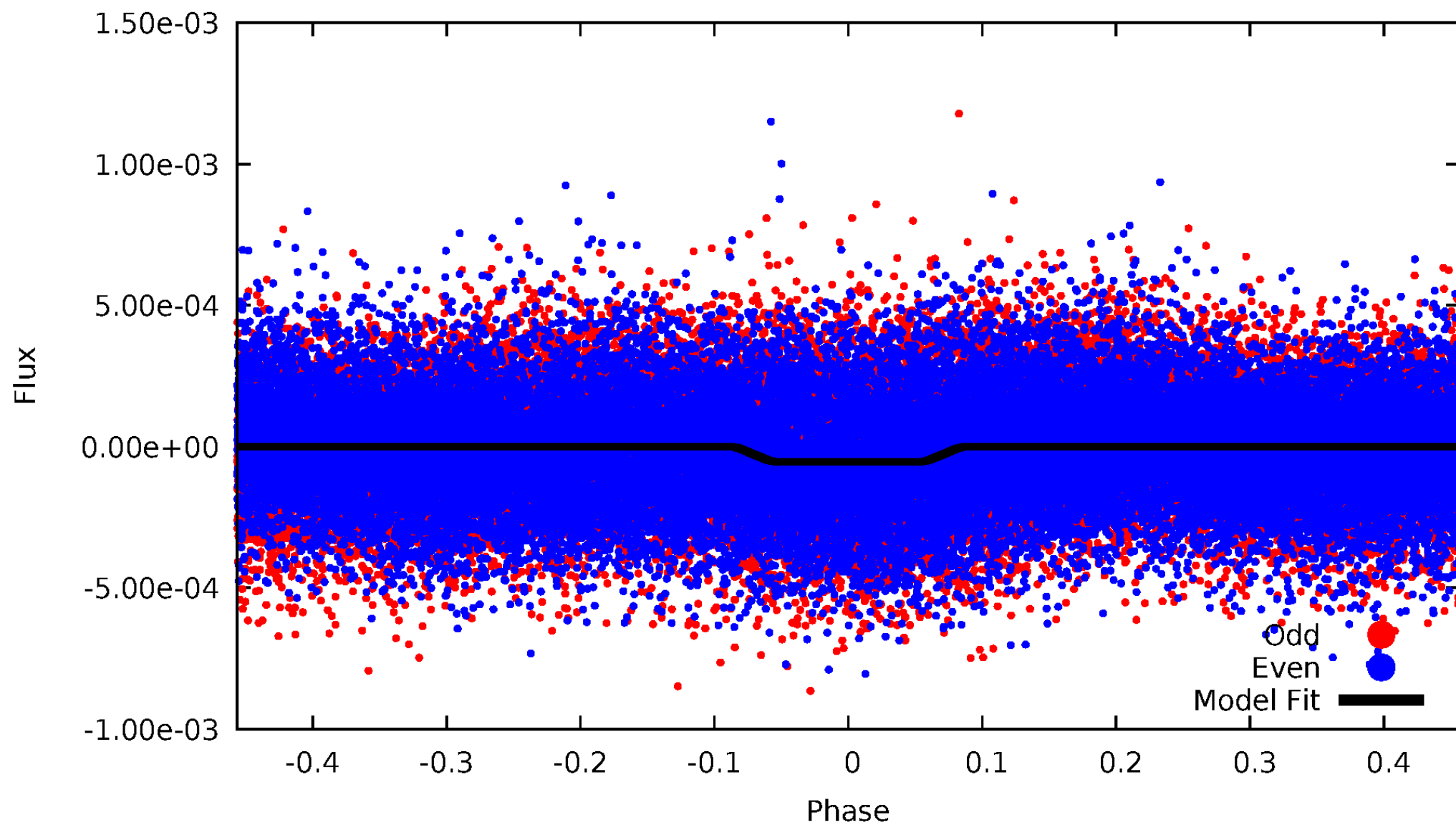
# DV Odd/Even

TCE 005450428-01

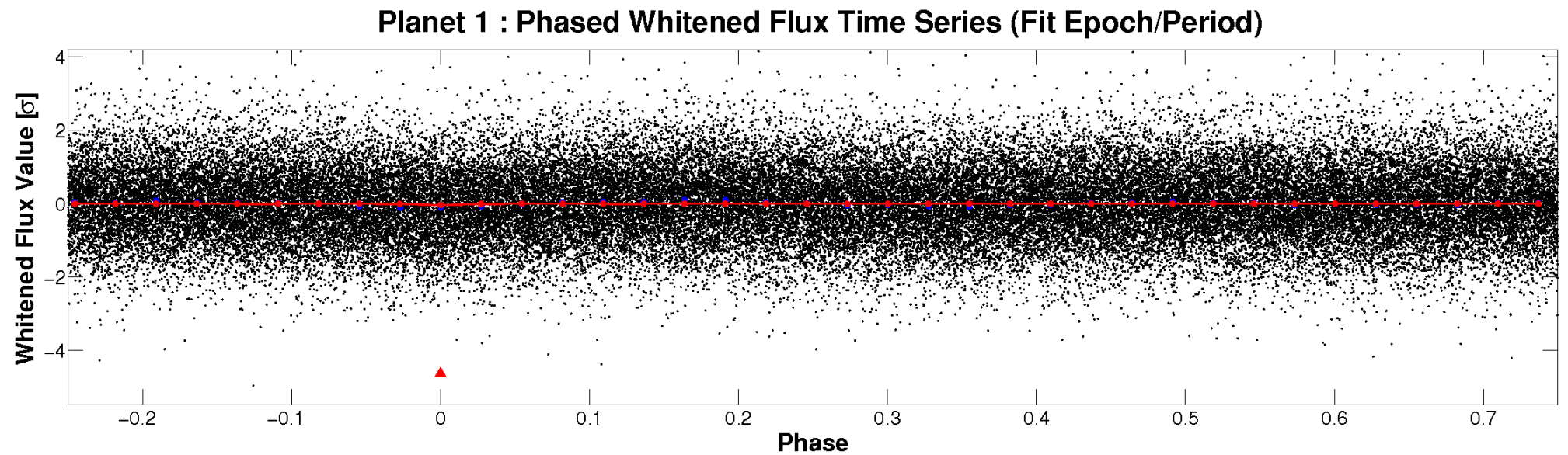
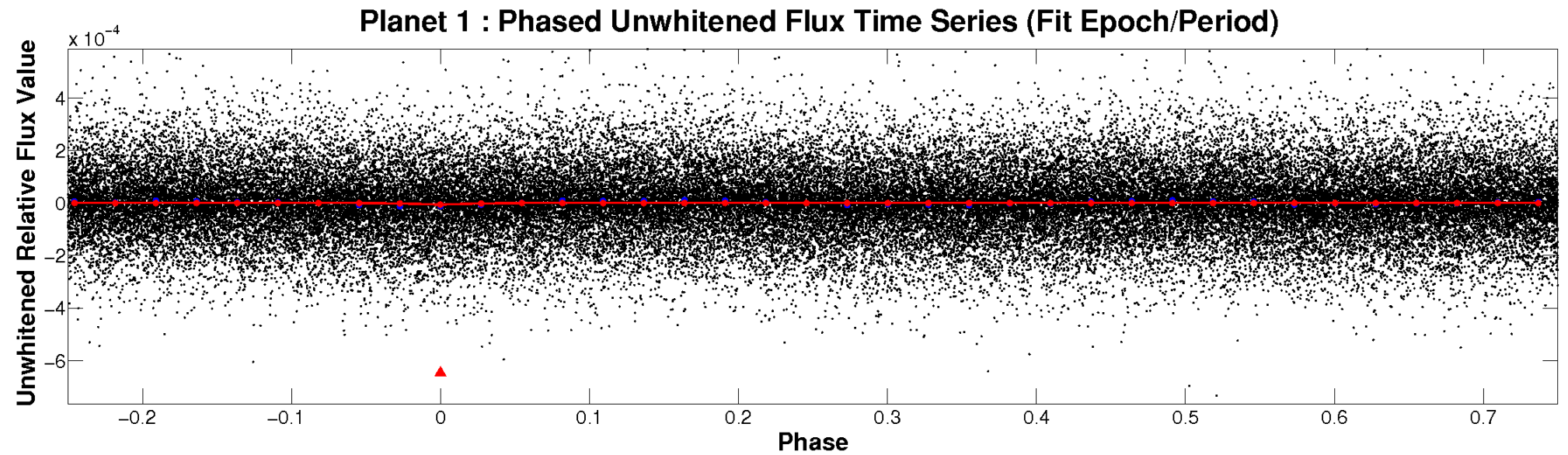


# ALT Odd/Even

TCE 005450428-01

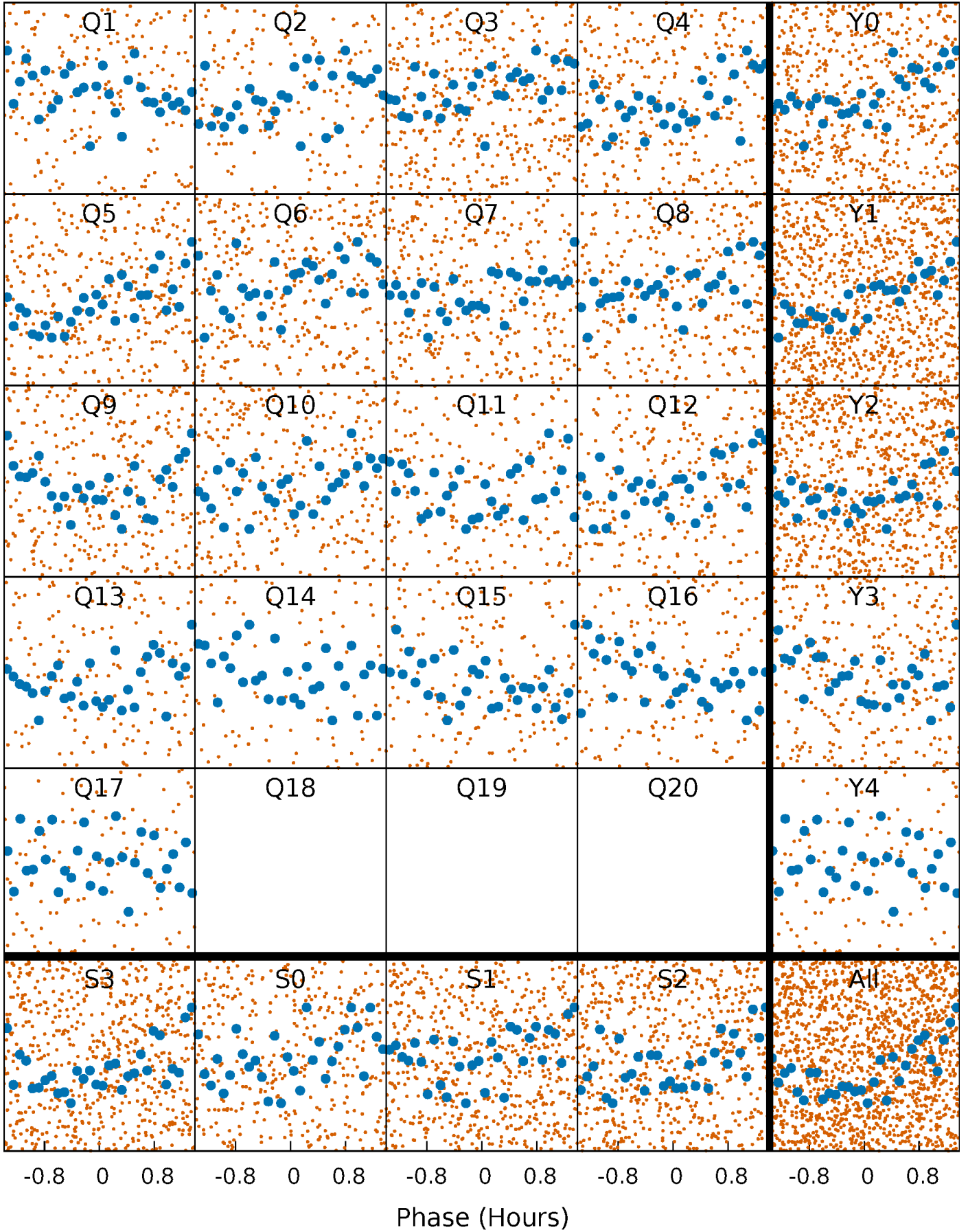


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

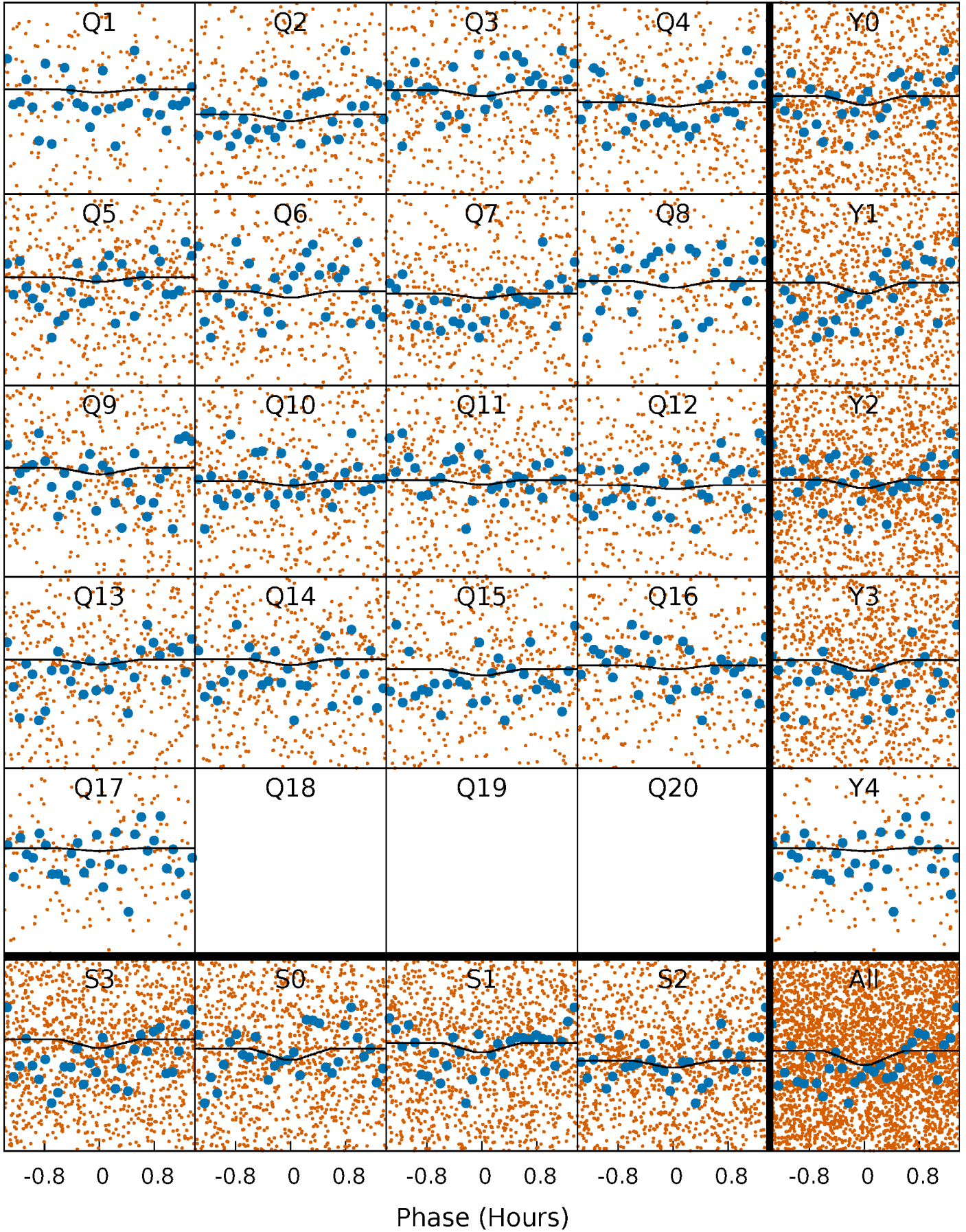
TCE 005450428-01   P= 0.748658 Days    $T_0=131.919070$  (BKJD)





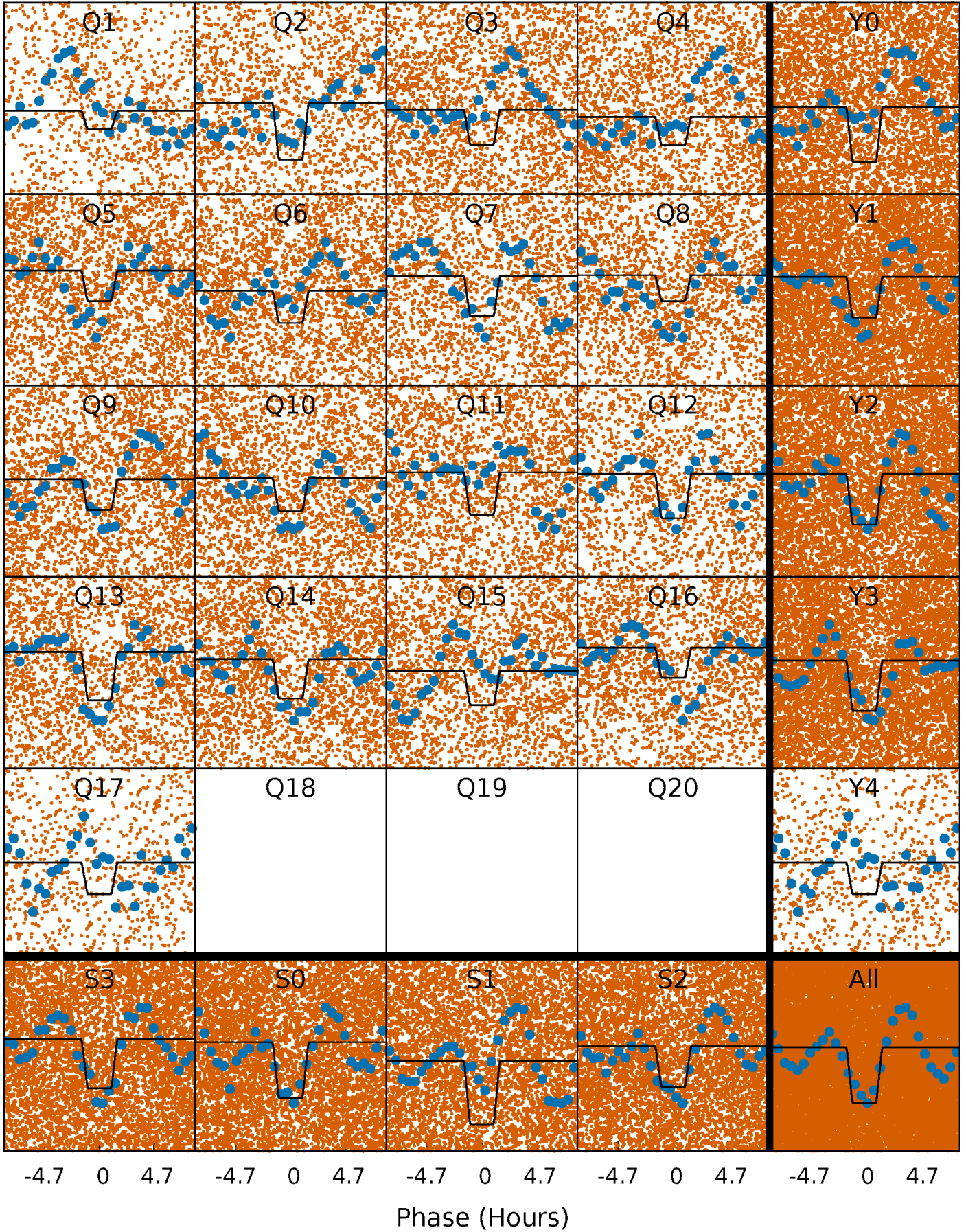
# DV Quarter-Phased Transit Curves

TCE 005450428-01 P= 0.748658 Days  $T_0=131.919070$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005450428-01 P= 0.748670 Days  $T_0=131.887304$  (BKJD)

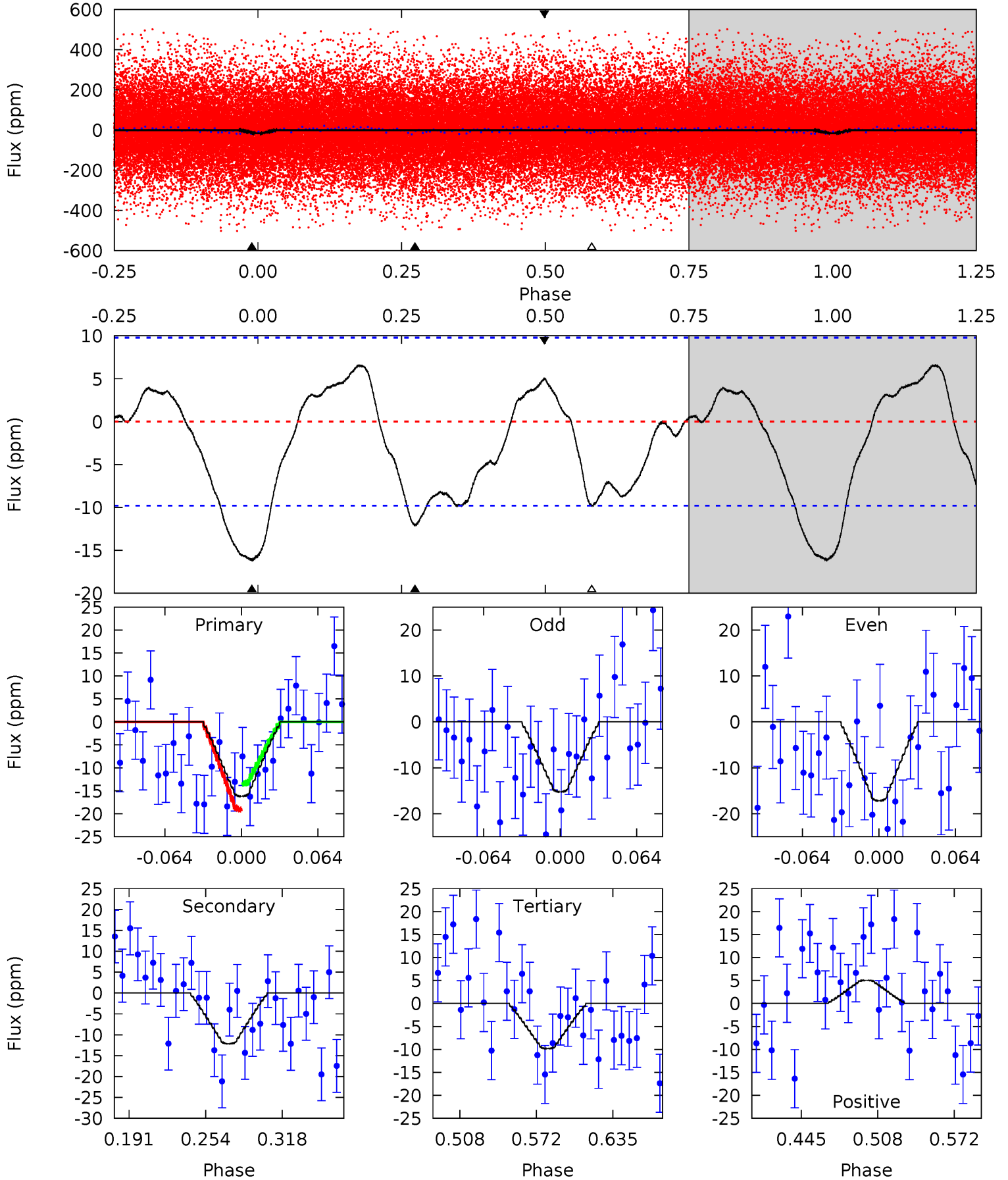




# DV Model-Shift Uniqueness Test

005450428-01, P = 0.748658 Days, E = 131.170412 Days

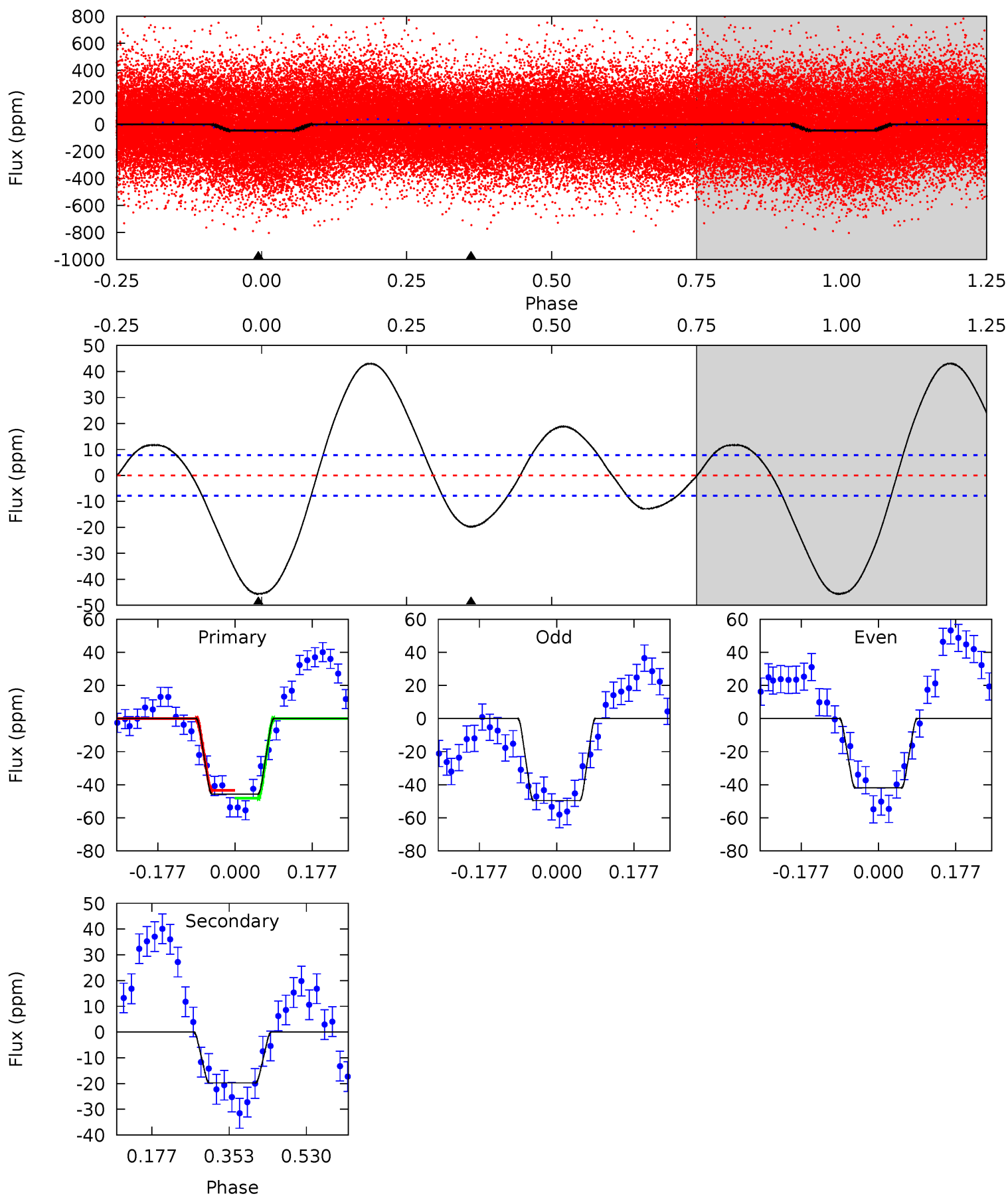
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	5.78	4.68	2.40	4.66	1.86	2.26	3.04	5.32	1.10	3.38	0.46	1.11	0.29	1.34



# Alt Model-Shift Uniqueness Test

005450428-01, P = 0.748670 Days, E = 131.138634 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	11.2	0	0	4.44	1.35	7.34	26.0	26.0	11.2	11.2	2.24	0.82	0.49	1.37





### Stellar Parameters For KIC 005450428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6631^{+72}_{-86}$	$3.983^{+0.195}_{-0.105}$	$-0.040^{+0.150}_{-0.150}$	$2.043^{+0.377}_{-0.503}$	$1.468^{+0.115}_{-0.187}$	$0.243^{+0.276}_{-0.082}$
	+1%/-1%	+5%/-3%	+375%/-375%	+18%/-25%	+8%/-13%	+114%/-34%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005450428-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-12 \pm 2$	$0.63^{+0.40}_{-0.36}$	$4296^{+213}_{-270}$	$7138^{+5661}_{-1696}$	$5.495^{+23.902}_{-3.423}$
Alt.	$-20 \pm 2$	$1.55^{+0.46}_{-0.42}$	$4289^{+195}_{-250}$	$4993^{+861}_{-597}$	$1.487^{+1.257}_{-0.605}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

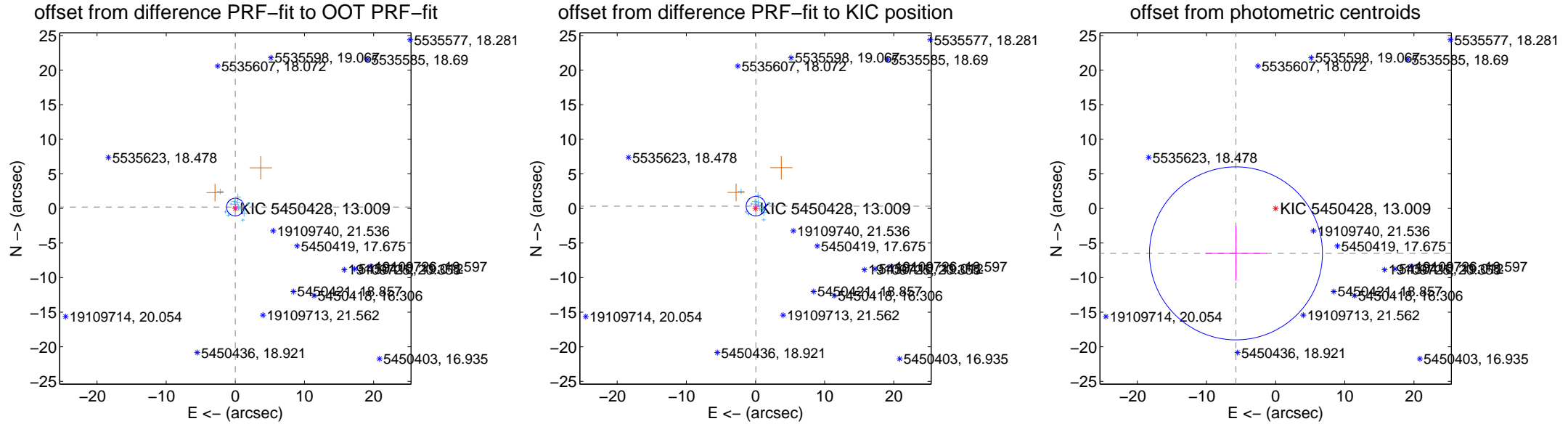
## DV Centroid Data

Supplemental centroid analysis for 005450428-01. Kepler magnitude: 13.01. Transit SNR 1.61

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.200 \pm 0.424$	0.47	$0.008 \pm 0.372$	$0.200 \pm 0.427$
PRF-fit source offset from KIC position	$0.341 \pm 0.470$	0.73	$-0.055 \pm 0.401$	$0.336 \pm 0.456$
photometric centroid source offset	$8.66 \pm 4.17$	2.08	$5.73 \pm 4.43$	$-6.50 \pm 3.95$



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

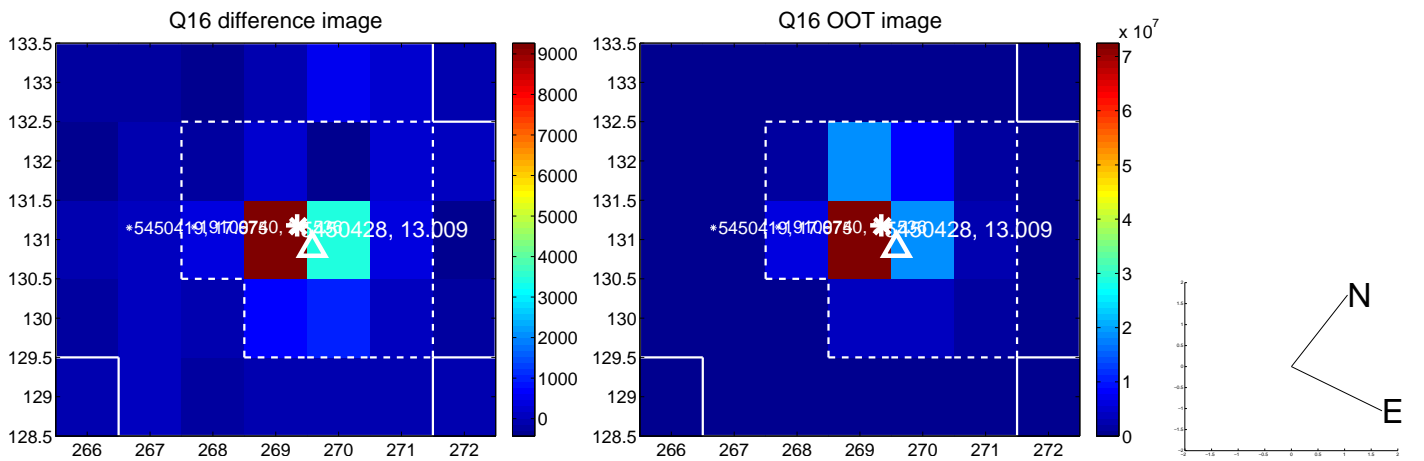
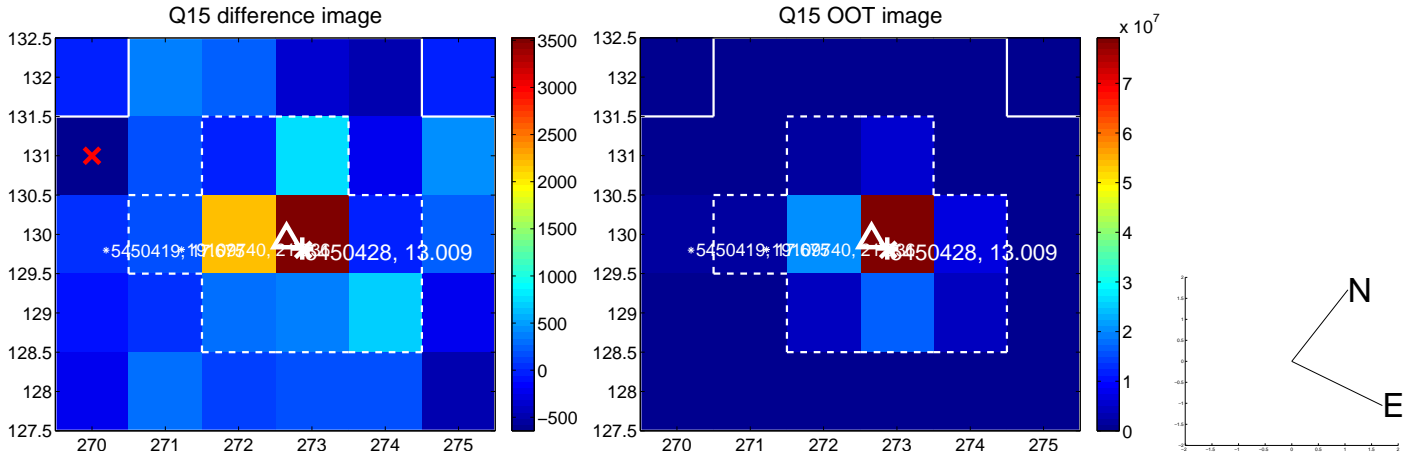
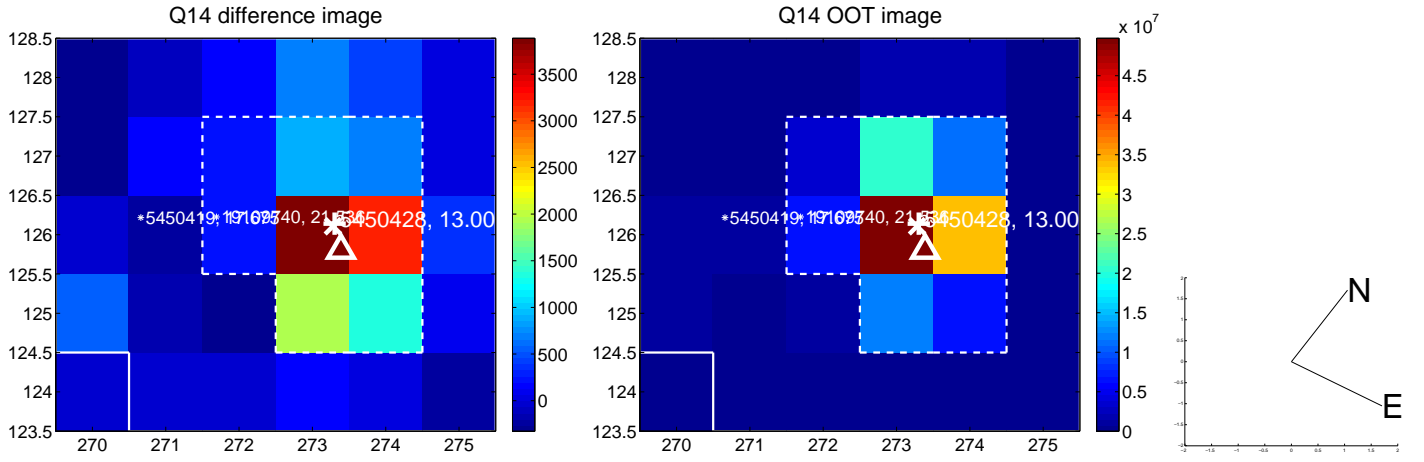
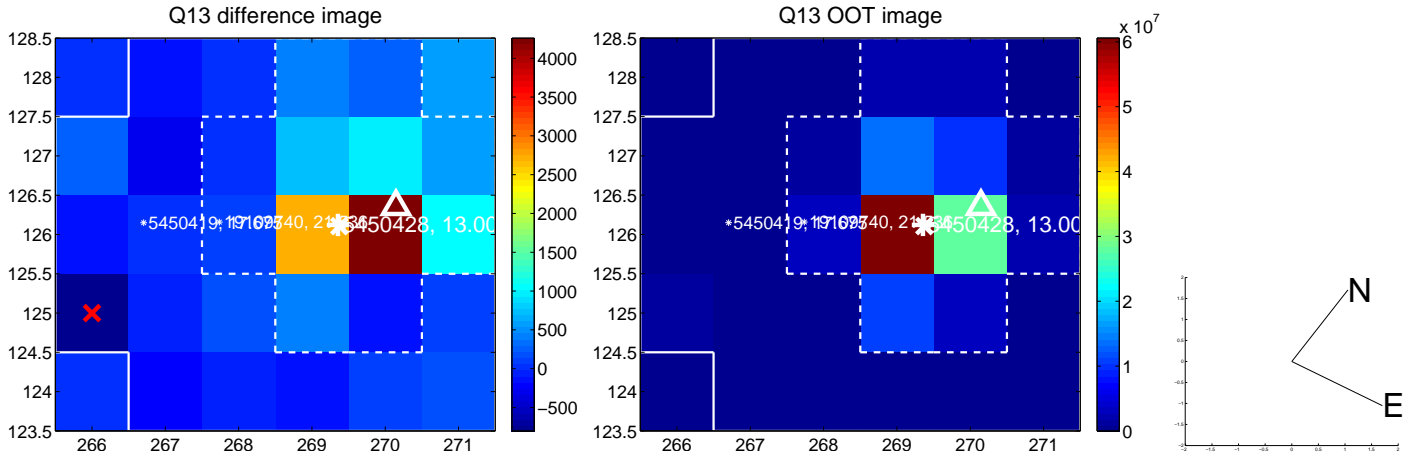




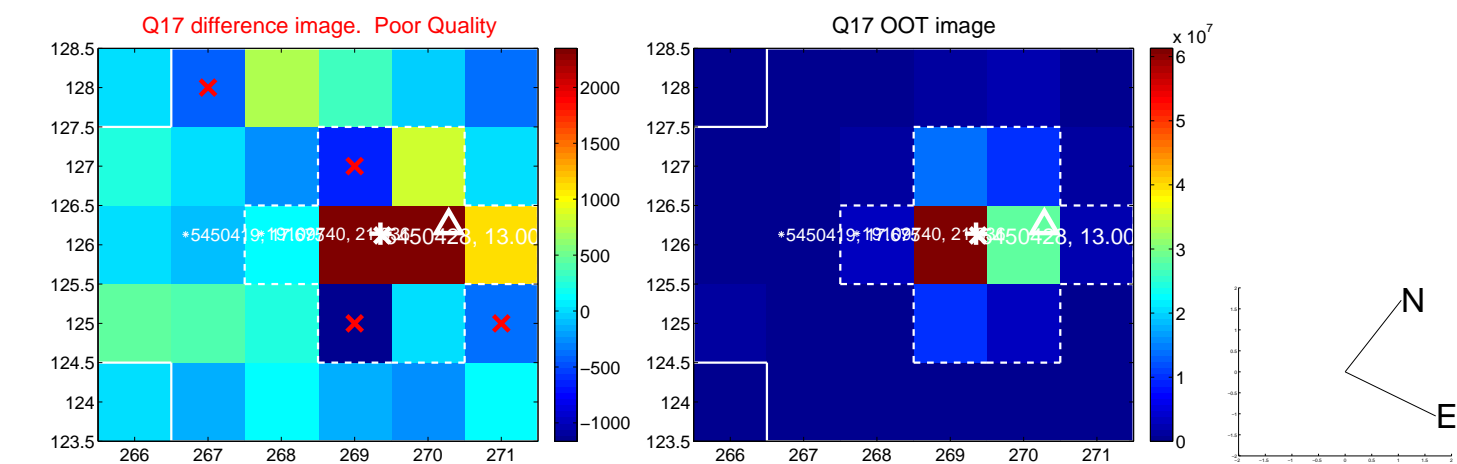




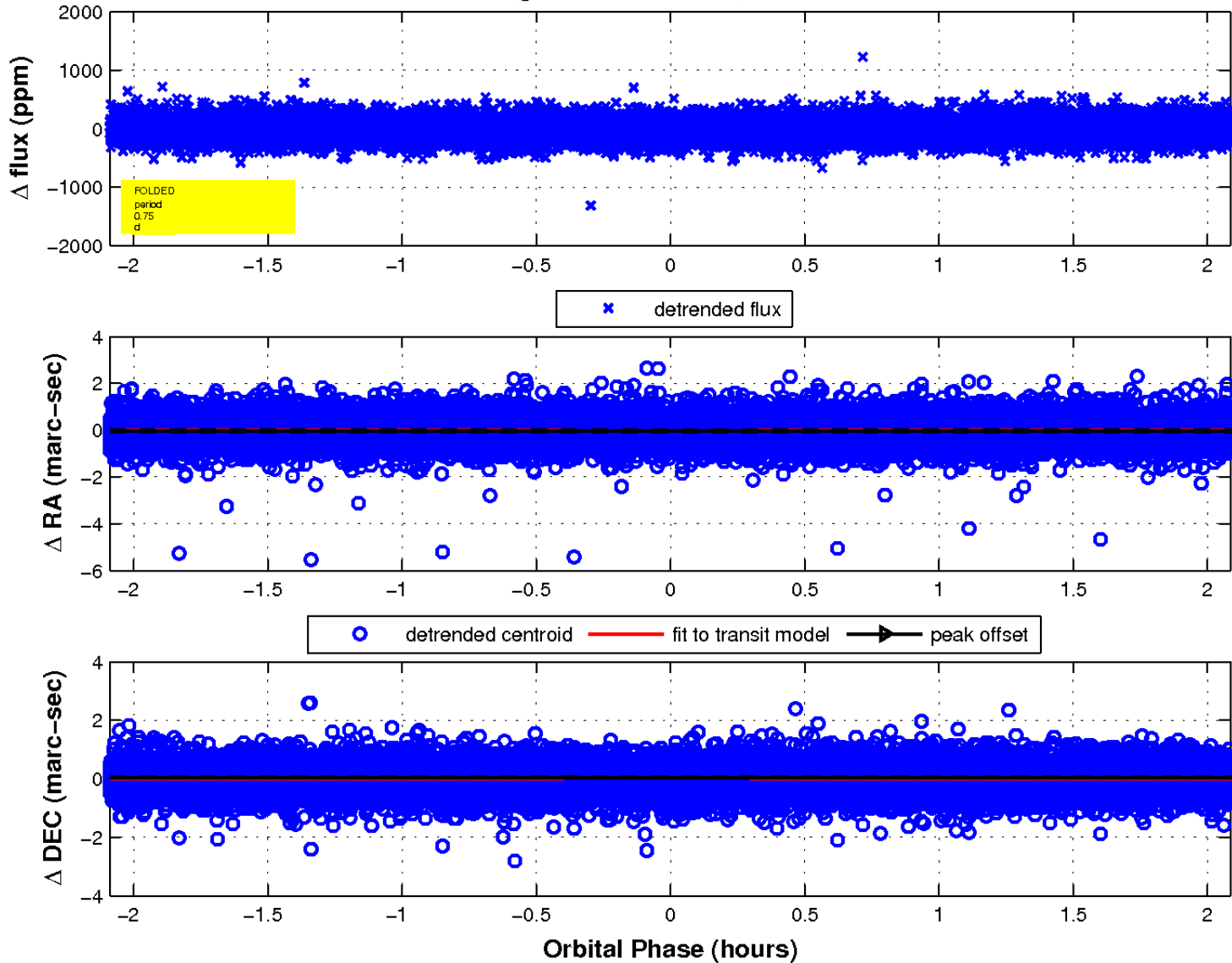
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

